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THE OFFICIAL JOURNAL OF THE RADIO ASSOCIATION OF ERIE

DECEMBER 1994

QUA RAE

—— .— ..— .— .—. .— .

The Radio Association of Erie is a non-profit club serving the tri-state area by providing emergency communication during a civil disaster, as well as providing communication support for public service events. The club meets 7:00 PM on the first Thursday of each month at the Red Cross Chapter House, 4961 Pittsburgh Avenue, Erie, PA. Membership is open to any person interested in amateur radio. For membership information, contact Bob Schwimmer, N3FAW at 866-3027. Area nets: Tri-State RACES Emergency Net is conducted weekly on 146.61 MHz Sundays at 6:30 PM; ARES/SKYWARN Net on 146.61 MHz Sundays at 9:30 PM; RAE Novice/Technician Net on 28.400 MHz Wednesday at 8:30 PM; 6 Meter AM Net Wednesday at 9:00 PM on 50.52 MHz; 10 Meter RTTY Net on Friday at 8:30 PM on 28.280 MHz.

R.A.E. Christmas Party Will Be:
Sunday December 11, 1994
At The ERIE Maennerchor Club

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PRESIDENT'S CORNER

Dan Miller, K3UFG

Well folks, the time has come to put a lid on all the fun for 1994, at least as far as my job as President of the Radio Association of Erie goes.

The year has brought many great things -- not only for the club, but for me personally as well. We have grown in numbers with more members than ever before. We had a super Field Day ... the first of hopefully, many Special Event Stations on an annual basis ... the most productive year ever, public service event wise, with more than previous years ... the most profitable Hamfest in our history ... and many fantastic programs providing us with a wealth of information.

My congratulations to all those who have been elected to office for 1995 -- Sue Seyboldt will make a fine president and with the support of all the membership, will have a very successful year as well.

My thanks to all who have helped make the year a success and a great enjoyment in my life. I have learned much about this organization and sincerely hope it can overcome the obstacles that continue to stand in the way of progress for the very membership they are supposed to protect and represent.

It is with much regret that I end this year on such a sour note -- namely the very inappropriate actions of a few that caused the annual election to become the subject of widespread ridicule.

I personally feel that I have failed the club ... let the membership down ... by unsuccessfully completing the goals which I had set at the beginning of the year. I had every intention of instituting an HF Link between 2 meters and the 10 meter nets -- never happened. I felt we needed to improve our range for the repeater by implementing the voter system -- this fell between the cracks. And last, but far from least, I was unable to thwart the shameful way the election was handled.

We can not change the past, but we CAN learn from it!!! Therefore I sincerely hope 1995 brings about whatever is necessary to get the club back on the road to fulfilling the goals and living up to its principles as they were intended by the originators of the club.

To everyone who reads this, I appreciate all the help you have given to me and to the club for this past year. Please continue to give your support to the new officers and participate as much as possible so they can fulfill their duties as well.

I hope to see everyone at the Christmas Dinner on Sunday, Dec. 11. The program is not yet planned -- only the dinner.

The next President's Corner will be written by the new president -- Sue Seyboldt.

Once again, from the bottom of my heart, thank you and God bless you all!

Dan Miller

Dan Miller, K3UFG

Merry Christmas
&
Happy New Year

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Art Paavola, D.V.M. **Tom McClain, D.V.M.** **Jeff Paavola, D.V.M.**

ANNUAL MEETING OF THE R.A.E. - NOVEMBER 3,1994

THE PRESIDENT K3UFG CALLED THE MEETING TO ORDER AT 7:36 P.M. AND TURNED THE MEETING OVER TO N3MRB CHAIRPERSON OF THE ELECTION NOMINATING COMMITTEE.

BEANIE, N3MRB PRESENTED THE LIST OF NOMINEES AND ASKED FOR NOMINATIONS FROM THE FLOOR. K3UFG NOMINATED GENE ROBERTSON N3RKN FOR PRESIDENT AND KA3FZO SECONDED THE NOMINATION.

WB3KGT, OBJECTED TO THE NOMINATION ON THE GROUNDS THAT THE BY-LAWS MAKE NO PROVISIONS FOR NOMINATING ADDITIONAL NOMINEES FROM THE FLOOR.

GENE, N3RKN ASKED TO BE REMOVED FORM CONSIDERATION TO ELIMINATE ANY PROBLEMS.

BALLOTS WERE PASSED OUT AND MEMBERSHIP STATUS WAS CHECKED AND FILLED OUT BALLOTS WERE COLLECTED.

N3HPR, MADE A MOTION TO CLOSE THE ANNUAL MEETING AT 8:06 P.M. AND IT WAS SECONDED BY WR4W.

THE RESULTS WERE PRESENTED AFTER THE GENERAL MEETING. A TIE FOR BOARD OF DIRECTORS SEAT BETWEEN KA3WYO AND NORMAN TOUSEY WB3EZY HAD TO BE RESOLVED BY A SHOW OF HANDS.

THE RESULTS OF THE ELECTION ARE AS FOLLOWS:

PRESIDENT	N3LPO	SUE
VICE PRESIDENT	W3GZO	DICK
SECRETARY	KB3AKR	LIZ
TREASURER	KB3ALT	KAREN
BOARD OF DIRECTOR	N3HPR	TOM
BOARD OF DIRECTOR	WR4W	JIM
BOARD OF DIRECTOR	N3BZL	CLIFF
BOARD OF DIRECTOR	N3HUM	ERIC
BOARD OF DIRECTOR	WB3EZY	NORM

RESPECTFULLY SUBMITTED

DENNIS SHARER, SECRETARY

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Eric N3PQM Radio Shack K-Mart west Plaza 833-9404

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Volunteer Examiner's Report

At the November test session at Villa Maria Center, although the number of partial upgrades was good, not many attempted a complete upgrade.

Those who upgraded were Timothy Griffith N3NSL of Albion, and Ken Vossler KB2RLN of Falconer, New York, who gained their HF privileges.

Passing the Technician exams were Rose Messina of Erie, and Merlin Pengelly of Geneva, Ohio.

The $5.75 test fee will increase to $5.90, effective January 1, 1995. The ARRL VEC plans to continue their "no charge" policy for those examinations which consist of only elements 1A, which is Novice code, or element 2, which is Novice theory.

The FCC Licensing Division at Gettysburg now has a toll free number 1-800-322-1117. Between 8 A.M. and 4:30 P.M., EST, direct assistance is available. At other times, an automated message system will provide pre-recorded information on interference complaints, form requests, records, and Amateur Radio callsign assignments.

As the FCC's new computer system comes into its own and VECs begin to file Form 610 data electronically, it is expected that processing delays will decrease to the point that people will not worry about the fate of their 610 forms.

There has not been any tracking system for individual 610 forms at Gettysburg. Until the 610 form is keyed into the computer, which may be a considerable time after it arrives in Gettysburg, there has been no record of it. People who have waited for an extensive period of time for a new license or upgrade, and have called the FCC office were usually told that they had no record of their application. The answering was upsetting, in people believing that their 610 form had vanished.

Frustrations should disappear with the new computer system.
610 forms for Amateur radio licenses are processed twice monthly at Gettysburg.

The next test session for Novice through Amateur Extra exams at Villa Maria Center will take place on Saturday, December 4, at 8 A.M. Located at 2551 W. 12th Street, parking is available at either end of the grounds, and a free standing orange sign indicates the correct entrance.

Bring any current license, plus a copy of the license, and any current Certificate of Completion, plus a copy of the Certificate. The FCC requires that any current copies be furnished to them, and will not process the 610 form without the copies.

For any further information, contact me at (814) 665-9124.

Norma Vanderhoff, W3CG
ARRL VE Liaison

Editor's Notes

I feel as though I must add my own personal disappointment at the events which surrounded our annual club election. It sure is unfortunate that a club filled with so many good people can be undermined by the effort of only a few...

It's Hard To Give Up A Job You Love.... but unfortunately that's what I must do. For personal reasons, I feel as though I will no longer be able to edit your newsletter. Therefore, effective with the February Issue, the QUARAE will have a new editor.

I have certainly enjoyed these past months with "my finger on the pulse" of the RAE, and I thank you for allowing me to share my thoughts with all of you. Perhaps your new editor will allow me the privilege of sharing an article or two with you from time to time.

And lastly, to all those who contributed to the newsletter, and helped me make it more enjoyable, I can only offer a heartfelt thank you.

Gene, N3RKN

To All My New Friends In The RAE,
Please Have A Merry Christmas,
And A Happy New Year!!!

RAE Life Members

13-Nov-94

Three new life members are added to the Life Member roster this year: Lou Hahn WB3KVH, Evelyn Baker W3JQV and Ralph Miller N3LXG.

We salute and welcome these members to the Life Membership select group.

LAST NAME	*FIRSTNAME*	*CALL*
Baker	Evelyn	W3JQV
Barnes	L. Fred	KC3VD
Bliley	Charles A.	K3NAU
Bronson	Mark A.	KD2HG
Ciano	Joseph	K3IVG
Ferguson	James A.	KZ3C
Froncek	James	KA3RDA
Geer	Hobart	W3SN
Hahn	Harry	WA3AWB
Hahn	Louis K.	WB3KVH
Hall	Michael	WA3HSR
Hooper	Robert	WA3OOM
Jackson	Robert	KC3BG
Kaiser	Isabelle	W3KPE
Kelly	Donald L.	KA3QDM
Kidd	Richard	WB3ETW
MacIvor	William	W3AQY
Miller	Ralph	N3LXG
Moser	Clarence	W3RLJ
Ponchak	Joseph	KA3CPV
Rhodes	Donald	WB3DNF
Robinson	W. Lee	WA3HJC
Soltys	Gregory	KO3H
Sonowski	Joseph F.	KA3IBD
Squire	John	K3UPC

MAKE YOUR CLUB THE BEST IT CAN BE -- PARTICIPATE!!!

MINUTES OF THE R.A.E. GENERAL MEETING - NOVEMBER 3, 1994

THE PRESIDENT, K3UFG CALLED THE MEETING TO ORDER AT 8:07 P.M. AND DIRECTED THE SECRETARY TO TAKE ROLL OF OFFICERS AND BOARD MEMBERS PRESENT. THE FOLLOWING WERE IN ATTENDANCE: K3UFG, W3GZO, KA3WYO, N3MRB, KA3QDM, N3FAW, WB3DOM.

THE FOLLOWING VISITORS WERE PRESENT KB3BFE, N3TPG - KEN.

THERE WERE SEVERAL UP GRADES, N3MTJ TO GENERAL, N3SDX MIKE, CATHY BERGKESSEL.

K3UFG ASKED FOR A MOTION TO ACCEPT THE MINUTES AS PRINTED. A MOTION TO ACCEPT WAS MAKE BY MARK, KD2HG AND SECONDED BY JIM, WR4W MOTION CARRIED.

THE TREASURERS REPORT WAS GIVEN BY W3GZO, A MOTION TO ACCEPT WAS MAKE BY N3MEC AND SECONDED BY KB3AAW, MOTION CARRIED.

W3PIX GAVE A REPORT ON THE PAQSO PARTY AND REMINDED EVERYONE TO TURN IN THERE LOG SHEET THIS WEEK.

WR4W REPORTS THAT THE LICENSING CLASSES ARE GOING WELL THEORY PORTION IS OVER AND CODE IS CONTINUING.

N3HPR INFORMED US THAT HAMFEST 95 IS IN THE PLANNING STAGES ARRL APPROVAL HAS BEEN RECEIVED AND CONTRACTS FOR FRANKLIN FIRE HALL HAVE BEEN SIGNED.

ARES REPORT BY N3HPR, 90 PHOTO ID'S HAVE BEEN ISSUED OUT OF 119 MEMBERS TO DATE A MAKE-UP SESSION WILL BE NOVEMBER 13 FROM 2 - 4 P.M. AT THE RED CROSS. YOU MUST HAVE I.D. BADGES FOR SECURITY ACCESS IN THE EVENT OF AN EMERGENCY. ALSO, A SIMULATED EMERGENCY TEST WILL BE HELD SATURDAY NOVEMBER 12.

N3EOY MADE MENTION OF THE UPCOMING SNOW REPORTING FOR SKYWARN OBSERVERS.

W3CG REMINDED EVERYONE OF V.E. EXAMS SATURDAY, NOVEMBER 5TH AT VILLA.

<u>COMING EVENTS</u> - R.A.E. CHRISTMAS PARTY SUNDAY DECEMBER 11 AT 6:00 P.M. RESERVATIONS NEED TO BE IN BY DECEMBER 5TH.

<u>NEW BUSINESS</u> - K3UFG WOULD LIKE TO SEE ADDED TO THE COMMITTEES, A GOOD AND WELFARE COMMITTEE. LIZ SUGGESTED THAT HOSPITALITY BE A PART OF THE COMMITTEE, ALSO.

K3UFG WOULD LIKE TO SEE A HALLOWEEN SAFETY PROGRAM FOR NEXTED YEAR.

<u>ANNOUNCEMENTS</u> - 50 - 50 DRAWING FOR $48.00 WENT TO W3QPP, PAUL GERBRACHT A CASE OF POP WENT TO KB3ALU, JOE MCLAIN.

WINNER OF THE TEN-TEC ARGOSY BY DRAWING FOR A SET AMOUNT OF $300.00 WAS N3LKV.

A MOTION TO ADJOURN THE MEETING WAS MADE BY N3LBI AND SECONDED BY KB3AKR, MOTION CARRIED.

RESPECTFULLY SUBMITTED
DENNIS SHARER, SECTARY

CLASSIFIED ADS

Wanted:
Borrow, Buy, Copy. Instruction book for Murata (MURATEK) Model M1850 fax machine.
WI3U Hank 864-9960

For Sale:
Icom R100 Communications Receiver. Continuous coverage from .100 thru 1856 Mhz. AM, FM, & WFM - no SSB. Like New, $499.
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For Sale:
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Custom built 1000 Volt power supply
2. Astatic Mod. 1CC ceramic mic w/stand
3. Quement SWR Bridge
4. Military issue phone patch
5. Miniproducts B24 beam antenna for 6,10,15, & 20M
6. CDE antenna rotor

AM & CW Station:
1. Heath Mod TX-1 TX (Apache)
80 - 10M operation, w/150 watts AM & 180 watts CW.
2. Heath Mod. RX-1 RX (Mohawk)
160 - 2m operation w/ selectable side band.
3. Heath Mod. SB-10 side band adaptor.
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4. Custom built antenna relay rated at 1000 watts out.
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6. Turner mod. 254C ceramic mic.
Also have BC-221 Freq. Meter & misc test equipment
WA3KAI Dale 455-8829

For Sale:
NiCad Battery pack for RS HT's $25, Alkaline Pack / holder for RS & ICOM HT's $6, Battery Separator Cable (CP-10) for RS & ICOM HT's $10, Wall charger for ICOM & RS Batt's $8. Sp/Mic for RS $10.
N3RKN Gene 774-2090

For Sale:
Radio Shack Hand Held Scanner 10 Channels, covers FM VHF Lo & Hi, UHF (not 800Mhz). Direct frequency entry on keyboard. Works great with box & book. $40.00
N3RKN Gene 774-2090

CLASSIFIED ADS ARE FREE TO ANY RADIO ASSOCIATION OF ERIE MEMBER, AND THEY REALLY WORK! IF YOU WANT TO BUY, SELL, OR TRADE ANYTHING OF USE TO OTHER HAMS, SUBMIT YOUR WRITTEN COPY TO ME - GENE N3RKN - BEFORE THE 15TH OF THE MONTH IN WHICH YOU WISH YOUR AD TO APPEAR.

NON-MEMBERS MAY ALSO ADVERTISE AT THE RATE OF $2.00 PER MONTH IN ADVANCE TO GENE ROBERTSON, 1215 MAPLE AVE. LAKE CITY, PA 16423.

The Care & Feeding Of Nickel Cadmium Technology Batteries, Part II
By Gene Robertson

After exploring some of the more theoretical aspects of Nickel Cadmium batteries last month, now we will move on to some more practical information.

Charging:
The fundamental rule of Ni-cd charging is that we want to replace only that charge which has been used, and never overcharge. In an ideal world, we would use the pack on our HT until the low battery indicator told us that the pack was fully discharged, and then fully recharge. In the real world, this seldom occurs. Our choices then are: 1) use a low enough charge rate so that any reasonable charge period would not significantly heat the cell, or cause it to vent electrolyte, or 2) devise some method of accurately determining when the pack is fully charged. Most of the small, wall transformer type chargers supplied with HT's today fall into the former category. As long as we don't mind a 15 hour charge period, and we remember to disconnect the charger after 12 hours and before 24 hours, the detrimental effects on our pack will be minimal. If you have an HT which sees minimal use, but you always want to be sure that the pack is charged, use one of the many light timers on the market to charge it for 1 hour a day. This will keep the pack pretty much at peak. Just remember to use the 12 hour cycle to bring the pack back up after any significant use like a public service event, etc.

Now that we understand the "down and dirty" approach, how do the fast chargers with some intelligence work. As I mentioned earlier, the trick is to know when the pack is fully charged and stop before overcharging begins. Today there are 2 main ways to determine when a Ni-cd cell is fully charged: 1) Delta peak, and 2) Temperature.

Delta peak chargers work on the principle that as a Ni-cd cell or pack is charged the voltage continues to increase until it is fully charged. Then when fully charged, the voltage of the cell/pack actually begins to decrease slightly. Chargers of this type measure the continuous change in voltage (or delta) as the charging progresses and shut themselves off (or go into a trickle charge mode) when the change becomes negative.

Temperature sensing chargers, on the other hand, use a temperature sensing device (usually a thermistor) taped to one of the cells to detect a change in cell temperature. As you will recall from last month, Ni-cds begin to generate heat whenever they are overcharged. The thermistor detects the heat associated with the overcharge condition and shuts the charger off (or causes it to go into a trickle charge mode). Packs designed for use with these chargers will have a third connection on them (often marked T) for the temperature sensor.

As you may well be thinking, both of these scenarios work well only when all the cells within the pack are at the same level. If your temperature sensor is attached to a very weak (and therefore hard to charge) cell, then the rest of the cells in the pack get cooked while the charger tries to get it (the weak cell) warm. This problem occurs in the delta chargers with the individual voltage changes. This leads me to my next point which is that a Ni-cd pack is only as good as the weakest cell which it contains. This weak cell phenomenon causes much of what is commonly known as "memory".

There is also a third charging scenario which is sometimes employed, usually in newer video equipment. This type of charger simply discharges the pack prior to charging it up. While this works, it is a lot like the hunter who empties his gun by firing it into the ground at the end of every night. This type of scheme should only be used occasionally to cycle the pack, not each time the pack is charged.

Memory:

Memory is often defined as a lessening of the capacity of a given pack caused by repeated partial discharge cycles. Major Ni-cd manufacturers indicate that this effect is virtually impossible to reproduce in modern cells under laboratory conditions. It is my opinion that what most people identify as pack "memory" is really caused by one or two cells within any given pack which start out, or become weaker than the rest. This weakness may be the result of numerous causes such as electrolyte loss, internal shorts, etc. In very critical applications, manufacturers often match cells before combining them into packs. Additionally, never mix cells of different manufacturers into one pack for the same reason.

The scenario occurs as follows: Most modern equipment has some sort of circuitry to shut off whenever the Ni-cd pack becomes discharged. Let's again assume our HT has a 6 cell, 7.5 volt pack and shuts off at about 6.6 volts. Our fully charged pack starts out at a voltage of 8.4 volts (1.4v X 6 cells). In this instance, we have noticed that while we used to get about 1/2 hour of transmit use from the pack (it has a capacity of 600mah, and our HT draws 1.2ah on high power), we now get only about 10 - 15 minutes before the HT shuts off. What has happened is that one of the cells in our pack has become weaker than the rest. In Ni-cd packs, the weak cells get to do almost all the work, so they invariably get weaker if left untreated. Back to our example - our pack starts with all the cells at about 1.4v after a full charge. After a few minutes use we would expect all the cells to be approaching their nominal voltage of 1.25v. But, in this case, our weak cell is discharging much faster than the rest of the pack. In fact, in our 15 minutes of transmitting, the weak cell has dropped to near 0v and all of our other cells are still about 1.3v. This leaves our pack at about 6.5v (1.3v x 5, +0v), which means our HT shuts down. What often makes matters worse, whenever a cell is drained that far, it often reverses polarity and refuses to take a charge at all. At this point, our pack is totally unusable.

Repeated cycling of the pack will sometimes cure this problem if the weak cell is not permanantly damaged, or hasn't reversed polarity. If you can disassemble the pack case and use a voltmeter on the cells under load, you can quickly diagnose this problem and often the easiest fix is replacement of the offending cell if a comparable one can be obtained. Today unfortunately, many manufacturers "hermetically seal" their packs via glue or ultrasonically welding the plastic so that the only repair, if the cycling doesn't work, is replacement.

I hear cries of "how do we cycle a pack, Mr Wizzard" from the gallery so that's what I'll talk about next month when we'll build a discharger and learn how to use it. I'm sorry that this has dragged on to three parts but I get long winded sometimes....

73
Gene, N3RKN